300-pin transponder; small-form high-sensitivity receiver

At October's *European Conference on Optical Communications* (ECOC) in Amsterdam, The Netherlands, **Multiplex Inc** (South Plainfield, NJ, USA) launched the MTP103 10 Gb/s transponder (for short-, intermediate- and long-reach links up to 40 km, sampling mid-Q4/2001 for production in Q1/2002). The MTP103 meets the multi-source agreement (MSA) specifications that govern 300-pin transponders, though high integration allows a smaller package of just 2.5" x 3.5" x 0.5".

It incorporates its MTRX192L 10 Gb/s photoreceiver (with integrated limiting amplifier, enabling extremely high sensitivity of better than -19 dBm at a bit-error-rate of 10^{-10}) and one if its electro-absorption modulated lasers (EMLs: the 1310 nm MTX310EW or 1550 nm MTX510EW).

President and CEO Dr Won T Tsang says that Multiplex now offers 200- and 300-pin small-form transponders uniquely with 1310 and 1550 nm EMLs.

Multiplex also launched a small-form (0.5" x 0.595" x 0.235") 10 Gb/s "postage stamp" photoreceiver (sampling mid-Q4/2001 for production in Q1/2002). This features coplanar differential outputs (though its first-generation 0.66" x 0.8" x 0.3" single-output receiver is still available).

Multiplex was first to integrate a limiting amplifier into a receiver package, and the new small-form product is also available with this dynamic feature.

An APD receiver should be available in early 2002.

Smallest long-wavelength laser module

Sumitomo Electric Industries Ltd (Osaka, Japan) is shipping samples of its 1.3 μm SCP6828-XL (2 km range) and SCP6808-XL (15 km) SCP6000-series small-form-factor-pluggable (SFP) 2.5 Gb/s optical transceivers. These are based on 1999's SFF small-form-factor industry-standard-compliant SCM6000 series and are half the size of earlier SC duplex transceivers). The SCP transceivers contain the world's smallest long-wavelength laser diode module.

This is based on a mini transmitter optical sub-assembly (mini-TOSA), which has a maximum diameter of 4.0 mm. They also have a 2R (reshape, regenerate) function.

At a later date Sumitomo Electric will release models with a 1.55 μm laser and avalanche photo diode (APD) for long-distance transmission,

Sumitomo Electric Industries' 2.5 Gb/s optical transceivers, which contain the world's smallest long-wavelength lasers.

and models with transmission speeds of 156 Gb/s, 622 Gb/s and 1.25 Gb/s.

10 and 40 Gb/s transponders

Optical networking component developer **Optium Corp** (established in 2000 by the University of Central Florida's School of Optics/Center for Research and Education in Optics and Lasers in Orlando, FL, USA) has developed proprietary InP modulator device and opto packaging technology to enable cost-efficient and power-efficient module-level transponder optical subsystems for transmitting and regenerating 10 and 40 Gb/s data.

The company has opened two facilities (Orlando, FL and Chalfont, PA), intending to employ 90 staff by September and 150 by January 2002 and to ship its first revenue-generating products in Q1/2002.

Optium says that its components have low drive voltages and low power consumption and are designed for very low manufacturing costs.

This is, it says, because service providers are facing pressure from both customers and competitors to reduce pricing and to increase data delivery speeds. Unfortunately, current networks are severely impacted by the high cost of optical components and the high level of electrical power it takes to power the networks (especially in the metro and access markets).

Networks need perhaps thousands of optical-electrical-optical (OEO) interfaces (transponders) at each point where information is added or removed. Current 10 Gb/s OC-192 OEO interfaces require up to 20 W of power and can cost US$8,000-30,000 each. Equipment providers therefore need more cost-efficient and power-efficient transponders, particularly at OC-192 and higher data rates.

Optium is initially offering a line of OC-192 Very Short Reach modules (600 m to 12 km) with less than 5 W power consumption and Ultra-Long Reach modules (80 to 120 km) with less than 10 W. Soon Optium will offer OC-192 and OC-768 transponder modules with features such as tunable dispersion compensation and tunable wavelength control, which will help to enable wavelength agility and network reconfigurability in metro and access optical transport networks.

* Optium was formed in Autumn 2000, raising US$8m in Series A seed funding in November 2000 from Battery Ventures and Corning Inc.

In June Optium raised a further US$35.5m in Series B equity financing and US$5m in equipment debt financing.

CEO and co-chairman Dr Paul Suchoski joined this February (formerly co-founder and vp/General Manager of JDS Uniphase's EPD Division in Bloomfield, CT, USA from 1995-2000) and president and co-chairman Eitan Gertel in March (formerly vp/General Manager of JDSU's TSD Division in Chalfont, PA, USA since 1995).

The Component Group is co-led by VP of High-Speed Devices Peter Hallemeier and VP of Optoelectronic Device Packaging Doug Reilly (both formerly at Bloomfield); the Module Group by VP of RF Design Mark Colyar and VP of Transceiver Products Stephen Krasulick (both formerly at Chalfont).

Other vps include: Dr Geoff Burdge (Advanced Products); Tony Musto (Marketing); Cheryl Gowin (Finance); and David Tucker (Human Resources).